Energy Indicators Sources and Data Notes

1 Washington's Energy Use — End-Use Energy Consumption By Sector

Source: Energy Information Administration's State Energy Data System

2 Washington's Energy Use — Primary Energy Consumption by Source

Source: Energy Information Administration's State Energy Data System

EIA uses each state's mix of electric generation to map electricity consumption to production by primary fuels. This overstates the contribution of hydroelectricity, as Washington is part of an interconnected regional electric grid and relies on generation sources in other states that are less hydroelectric-intensive. (See Indicator #3).

The difference between primary and end-use energy consumption is the treatment of electricity (other fuels such as natural gas, petroleum, and coal are primary energy sources). Electricity must be generated using energy sources such as coal, natural gas, or falling water. These inputs to the power plant are counted as primary energy; the output of the power plant that is sold to homes and businesses is end-use electricity. Since over half of the energy inputs to thermal power plants are typically lost as waste heat, primary energy is larger than end-use.

3 Washington's Energy Use — Electricity Generation and Consumption by Source

Source: Washington State Fuel Mix Disclosure Database, Energy Policy Group, Washington State Office of Trade and Economic Development

4 Washington's Energy Bill — End Use Energy Expenditures

Sources: Energy Information Administration's State Energy Price and Expenditure Report; President's Council of Economic Advisors

5 Washington's Energy Intensity — Energy Consumption per Dollar of Gross State Product

Sources: Energy Information Administration's State Energy Data System; U.S. Department of Commerce, Bureau of Economic Analysis; President's Council of Economic Advisors

6 Washington's Energy Intensity — Energy Consumption per Capita

Sources: Energy Information Administration's State Energy Data System; Washington State Office of Financial Management

7 Washington's Energy Intensity — Energy Expenditures per Dollar of Washington GSP

Sources: Energy Information Administration's State Energy Price and Expenditure Report; U.S. Department of Commerce, Bureau of Economic Analysis; President's Council of Economic Advisors;

Energy expenditures include expenditures by households and businesses, and for personal and business transportation.

8 Residential Sector Trends — End-Use Energy Consumption by Fuel

Source: Energy Information Administration's State Energy Data System

The primary petroleum products consumed in households are heating oil (No. 2 distillate oil) and propane. Both are consumed mainly for space heating, though propane can also be used for cooking and water heating. Residential sector energy use does not include energy consumption for personal transportation.

9 Residential Sector Trends — Household Energy Intensity

Sources: Energy Information Administration's State Energy Data System; U.S. Department of Commerce, Bureau of the Census

10 Residential Sector Trends — Household Energy Bill

Sources: Energy Information Administration's State Energy Price and Expenditure Report; U.S. Department of Commerce, Bureau of the Census; and Bureau of Economic Analysis; President's Council of Economic Advisors

11 Residential Sector Trends — Household Energy Bill with Transportation

Source: Energy Information Administration's State Energy Data System and the Residential Energy Consumption Survey; U.S. Department of Transportation, Federal Highway Administration Highway Statistics

These figures apportion the household energy bill to end-use shares using information from the 1997 Residential Energy Consumption Survey. Household transportation energy expenditures are estimated based on an estimate of the portion of motor gasoline expenditures that are made by households.

12 Commercial Sector Trends — End-Use Energy Consumption by Fuel

Source: Energy Information Administration's State Energy Data System

13 Commercial Sector Trends — Sector Energy Intensity

Sources: Energy Information Administration's State Energy Data System; U.S. Department of Commerce, Bureau of Economic Analysis; President's Council of Economic Advisors

14 Industrial Sector Trends — Energy Consumption by Fuel

Source: Energy Information Administration's State Energy Data System

Bio-fuels consumed in the industrial sector comprise mainly wood and wood waste products such as black liquor or hog fuel. These fuels are primarily burned in industrial boilers to make steam, which can be used to fire industrial processes or to generate electricity for on-site use. Industrial coal consumption has declined from a high of 14 trillion Btus in 1976 to 2.2 trillion Btus in 1999.

15 Industrial Sector Trends — Industrial Sector Energy Intensity

Sources: Energy Information Administration's State Energy Data System; U.S. Department of Commerce, Bureau of Economic Analysis; President's Council of Economic Advisors

Note that electricity consumption for the industrial sector includes consumption for the direct service industries (DSIs) that purchase electricity directly from the Bonneville Power Administration.

16 Transportation Sector Trends — End-Use Energy Consumption by Fuel

Source: Energy Information Administration's State Energy Data System

Motor gasoline figures include some consumption for off-road uses such as recreational vehicles and agricultural uses. No. 2 distillate, also known as diesel fuel, is used by large trucks, ships, and railroads. The only transportation use for residual fuel is by very large ships. Aviation fuel includes kerosene-based jet fuel used by major airlines, aviation gasoline consumed by smaller airplanes, and military jet fuel.

17 Transportation Sector Trends — Fuel Cost of Driving and Miles Driven per Capita

Sources: Energy Information Administration's State Energy Data System; President's Council of Economic Advisors; U.S. Department of Transportation, Federal Highway Administration, Washington State Dept. of Transportation, Washington State Office of Financial Management.

18 Transportation Sector Trends — Transportation Sector Energy Intensity

Sources: Energy Information Administration's State Energy Data System; Washington State Dept. of Transportation; US Dept of Energy Center for Transportation Analysis at the Oak Ridge National Laboratories

Note that on-raid fuel efficiency is less than the official, EPA-rated fuel efficiency for new cars. The Energy Information Administration estimates actual, on-road performance to be 25.5% worse than the EPA rating for cars and 18.7% worse for light trucks for new cars in 2000 (EIA, *National Energy Modeling System*, Fuel Economy Degradation Factor).

19 Energy Price Trends - Average Energy Prices by Fuel

Sources: Energy Information Administration's State Energy Data System; President's Council of Economic Advisors

20 Energy Price Trends - Average Electricity Prices by Sector

Sources: Energy Information Administration's State Energy Price and Expenditure Report; President's Council of Economic Advisors

21 Energy Price Trends - Average Natural Gas Prices by Sector

Sources: Energy Information Administration's State Energy Price and Expenditure Report; President's Council of Economic Advisors

22 **Energy** Price Trends - Washington Gasoline Prices Since 1970

Sources: Energy Information Administration's Annual Energy Review; President's Council of Economic Advisors

23 Environmental Trends - Energy-Related Greenhouse Gas Emissions

Sources: Energy Information Administration's State Energy Data System, Kyoto Protocol